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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,147	07/27/2001	Thomas J. Pinnavaia	MSU 4.1-553	1331

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EXAMINER	
LISH, PETER J	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/917,147	PINNAVAIA ET AL.	
	Examiner	Art Unit	
	Peter J Lish	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-26* is/are pending in the application.

4a) Of the above claim(s) *9-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 02/02/04 have been fully considered but they are not persuasive. Applicant argues with respect to the rejection over Pinnavaia et al. that the alumina, specifically the mesopore framework walls, is amorphous. This does not appear to be the case. Figure 8 of the Declaration, filed 3/04/03, is derived from Example 12 of the Pinnavaia et al. reference ('706). No difference is seen between the x-ray diffraction patterns shown by the product of example 12, as seen in Figure 8, and those of Figure 3 in Attachment A, which show typical patterns for MSU-S/B surfactant-boehmite mesophase and the corresponding MSU-γ alumina formed through calcinations, which are crystalline. Applicant's additionally argue that Pinnavaia et al. '706 states that example 12 is capable only of making alumina with amorphous framework walls, however, no such statement is seen, especially not in col. 17, pt. 3, or in example 12, as argued. The only discussion of modifying pseudoboehmite, as is done in example 12, states that pseudoboehmite can be transformed into mesostructured alumina containing framework confined mesopores" (column 12, lines 45-57), which would seem to imply that the mesopores are confined by a crystalline framework, further supported by Figure 8 of the Declaration.

Applicant argues with respect to the rejection over Vaudry et al. that the reference has no atomically ordered walls as shown by Figure 2 of the reference. However, Figure 2 is an x-ray diffraction pattern of a different scale, as it includes the high-intensity low angle line. One cannot determine the wide angle pattern (which exists on a much smaller scale) from this figure.

Therefore, examiner maintains the expectation that the alumina of Vaudry et al. is expected to have atomically ordered walls.

Furthermore, it is seen from Attachment A that the main process difference in making an alumina with atomically ordered walls from the process of making an alumina with amorphous walls is that the amorphous alumina (MSU-X in attachment A) must be heated at a lower temperature, 100 °C, for a period of time before calcination at higher temperature, 500 °C, begins. In this way, the surfactant takes part in ordering the mesopore walls. Vaudry et al. teaches a process wherein the alumina is heated from room temperature up to the calcination temperature of about 500 °C at a rate of about 0.5 °C per minute, thereby allowing heat treatment at lower temperatures for a prolonged period. Vaudry et al. also teaches that the loss of a substantial amount of structural water upon calcination reduces the local order of the resulting alumina, and that the extent of dehydration of the inorganic walls strongly influences the porosity properties of the aluminum. This would appear to support the expectation that Vaudry et al produce atomically ordered walls.

Applicant argues with respect to the rejection over Bagshaw et al., that the processing time of 16 hours is too short, and thus the alumina product contains amorphous walls. However, the processing time which applicant relies upon is used in the formation of the amorphous alumina, or MSU-X. Bagshaw et al. specifically teach the production of MSU-X, followed by a heat treatment at 100 °C for 6 hours and than calcination at 500 °C for 4 hours. In view of Attachment A, examiner's expectation that the alumina produced by Bagshaw et al. comprises atomically ordered walls is maintained.

Applicant argues with respect to the rejections over Kolenda et al. that very little of the composition shows tetrahedral coordination, however, applicant has no support for this statement. Furthermore, no difference is seen between the process of Kolenda et al. and that of the applicant. Therefore, examiner's expectation that the alumina produced by Kolenda et al. comprises atomically ordered walls and properties within the ranges claimed by the applicant is maintained.

Applicant argues with respect to the rejections over Gonzalez-Pena et al., that the examples of Gonzalez-Pena are repeated in Attachment A. Examiner kindly requests that the applicant point out where in Attachment A the process of these examples is repeated, as the examiner could not find such processes.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Pena et al. ("Thermally Stable Mesoporous Alumina…").

The rejection of the previous office action is maintained in its entirety and is incorporated herein by reference.

Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Pena et al. ("Improved Thermal Stability of Mesoporous Alumina Support…")

The rejection of the previous office action is maintained in its entirety and is incorporated herein by reference.

Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinnavaia et al. (US 6,027,706).

The rejection of the previous office action is maintained in its entirety and is incorporated herein by reference.

Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bagshaw et al. ("Mesoporous Alumina Molecular Sieves").

The rejection of the previous office action is maintained in its entirety and is incorporated herein by reference.

Claims 1, 3, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaudry et al. ("Synthesis of Pure Alumina Mesoporous Materials").

The rejection of the previous office action is maintained in its entirety and is incorporated herein by reference.

Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolenda et al. (US 6,197,276).

The rejection of the previous office action is maintained in its entirety and is incorporated herein by reference.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL

STUART L. HENDRICKSON
PRIMARY EXAMINER